

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16, 19, 22-28, 30, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US Publication number 2003/0011560), hereinafter referenced as Albert.

Regarding claim 1, Albert discloses Electrophoretic display comprising optical biasing element. Further Albert discloses wherein said A display (1) (see para [0066], Fig. 1-16) comprising: a display device (2) (see claim 1 [display element]); and a transreflector (7) (see para [0088] (reflective layer), [0089] (transmissive modes));

Albert also teaches typically, the optical properties of the electrodes 30, 40 and the particles 50 can be independently selected to provide desired display characteristics (see para [0085], [0151]).

Although Albert does not explicitly recite wherein said the transreflector comprises a plurality of discrete portions and is configured so that the transmittance and reflectance properties of at least one of said portions can be tuned independently of other portions. However, it is obvious to one ordinary skill in the art that the claimed invention to recognize that Albert's **optical properties of the electrodes 30, 40 and the particles 50 can be independently selected to provide**

desired display characteristics ([0096],[0097],[0102]), which is equivalent to applicant's claimed invention of wherein said the transreflector (7) comprises a plurality of discrete portions and is configured so that the transmittance and reflectance properties of at least one of said portions can be tuned independently of other portions.

Regarding claim 2, Albert discloses everything as applied above in claim 1. Further Albert discloses wherein said the transreflector (7) is a bistable device (see para [0078]).

Regarding claim 3, Albert discloses everything as applied above in claim 1. Further Albert discloses wherein said the transreflector (7) is a suspended particle device (see para [0078]).

Regarding claim 4, Albert discloses everything as applied above in claim 3. Further Albert discloses wherein said portions include cells containing separate particle suspensions (8a, 8b, 8c) (see para [0011], [0076], [0082]).

Regarding claim 5, Albert discloses everything as applied above in claim 3. Further Albert discloses wherein said portions include spatial regions within a compartment containing a particle suspension (see para [0133]).

Regarding claim 6, Albert discloses everything as applied above in claim 3. Further Albert discloses wherein said the suspended particle device (7) is configured to apply one or more electric fields to a particle suspension (8a, 8b, 8c) (see para [0042], [0043]).

Regarding claim 7, Albert discloses everything as applied above in claim 6.

Further Albert discloses wherein said at least one of the one or more electric fields is inhomogeneous (see para [0105] (strength of Electric field), [0088] (AC Electric field)).

Regarding claim 8, Albert discloses everything as applied above in claim 6.

Further Albert discloses wherein said at least one of the one or more electric fields is an AC field (see para [0088]).

Regarding claim 9, Albert discloses everything as applied above in claim 6.

Further Albert discloses wherein said at least one of the one or more electric fields is a DC field (see para [0088]).

Regarding claim 10, Albert discloses everything as applied above in claim 6.

Further Albert discloses wherein said the suspended particle device (7) is configured to apply to the particle suspension (8a, 8b, 8c) two electric fields with mutually orthogonal orientations (see para [0080], Fig. 1C).

Regarding claim 11, Albert discloses everything as applied above in claim 6.

Further Albert discloses wherein said the suspended particle device (7) is configured so that, following application to the particle suspension (8a, 8b, 8c) of a first electric field in order to cause the particles within the particle suspension (8a, 8b, 8c) to adopt a first particle alignment, a second electric field may be applied to the particle suspension (8a, 8b, 8c) in order to accelerate relaxation of said first particle alignment (see para [0042], [0043]).

Regarding claim 12, Albert discloses everything as applied above in claim 6.

Further Albert discloses wherein said further comprising an active matrix of electrodes

for selectively applying an electric field to one or more particle suspensions (8a, 8b, 8c) (see para [0046], [0047], [0055], Figs. 4A, 4B, 11).

Regarding claim 13, Albert discloses everything as applied above in claim 6.

Further Albert discloses wherein said the suspended particle device (7) is configured to apply an electric field to a particle suspension (8a, 8b, 8c) intermittently (see para [0043] (alternating current electric field), [0106] equivalent to the effect of reversing the electric field).

Regarding claim 14, Albert discloses everything as applied above in claim 1.

Further Albert discloses wherein said physical dimensions of the discrete portions are non-identical (see para [0080] (size of electrodes 30 and 40)).

Regarding claim 15, Albert discloses everything as applied above in claim 1.

Further Albert discloses wherein said the display device is a liquid crystal cell (2) (see para [0130]).

Regarding claim 16, Albert discloses everything as applied above in claim 15.

Further Albert discloses wherein said further comprising a quarter-wave plate (see para [0087] (Line 1-3 equivalent to the claimed invention)).

Regarding claim 19, Albert discloses everything as applied above in claim 15.

Further Albert discloses wherein said further comprising a light sensor (22) (see para [0185],[0204]).

Regarding claim 22, Albert discloses Electrophoretic display comprising optical biasing element. Further Albert discloses wherein said

A method of displaying an image (23) (see para [0066]) on a transflective display (1), which includes a display device (2) (see claim 1) and a transreflector (7) (see para [0075] (reflective layer), [0089] (transmissive modes)), comprising:

Albert also teaches typically, **the optical properties of the electrodes 30, 40 and the particles 50 can be independently selected to provide desired display characteristics (see para [0085], [0151]).**

Although Albert does not explicitly recite wherein said tuning the transmittance and reflectance properties of at least one of a plurality of discrete portions of the transreflector (7) independently of other portions. However, it is obvious to one ordinary skill in the art that the claimed invention to recognize that Albert's **optical properties of the electrodes 30, 40 and the particles 50 can be independently selected to provide desired display characteristics**, which is equivalent to applicant's claimed invention of wherein said tuning the transmittance and reflectance properties of at least one of a plurality of discrete portions of the transreflector (7) independently of other portions.

Regarding claim 23, Albert discloses everything as applied above in claim 22. Further Albert discloses wherein said the transreflector (7) is a suspended particle device and the step of tuning comprises applying one or more electric fields to a particle suspension (8a, 8b, 8c) (see para [0078], [0042], [0043]).

Regarding claim 24, Albert discloses everything as applied above in claim 23. Further Albert discloses wherein said step of tuning comprises applying one or more

electric fields to a plurality of separate particle suspensions (8a, 8b, 8c) (see pra [0042], [0043]).

Regarding claim 25, Albert discloses everything as applied above in claim 23.

Further Albert discloses wherein said at least one of said one or more electric fields is an inhomogeneous AC electric field (see para [0105] (strength of Electric field), [0088]).

Regarding claim 26, Albert discloses everything as applied above in claim 23.

Further Albert discloses wherein said at least one of said one or more electric fields is an AC field (see para [0088]).

Regarding claim 27, Albert discloses everything as applied above in claim 23.

Further Albert discloses wherein said at least one of said one or more electric fields is a DC field (see para [0088]).

Regarding claim 28, Albert discloses everything as applied above in claim 23.

Further Albert discloses wherein said step of tuning comprises applying one or more electric fields to the particle suspension (8a) intermittently (see para [0043] (alternating current electric field), [0106] equivalent to the effect of reversing the electric field).

Regarding claim 29, Albert discloses everything as applied above in claim 23.

Further Albert discloses wherein said at least one of said electric fields has a potential less than a saturation potential of the particle suspension (8a, 8b, 8c) (see para [0082], [0089] (negative potential may obviously be less than the saturation potential)).

Regarding claim 30, Albert discloses everything as applied above in claim 23.

Further Albert discloses wherein said further comprising, following the application of a first electric field in order to cause particles within a particle suspension (8a, 8b, 8c) to

adopt a given alignment, applying a second electric field in order to accelerate relaxation of said alignment (see para [0042], [0043]).

Regarding claim 31, Albert discloses everything as applied above in claim 22. Further Albert discloses wherein said the step of tuning the transreflector (7) comprises tuning the transmittance and reflectance values of at least one portion in accordance with a level of ambient light (10) detected by a light sensor (22) (see para [0185], [0204]).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albert in view of Baucom et al. (US Publication number 2002/0130832), hereinafter referenced as Baucom.

Regarding claim 18, Albert discloses everything as specified above in claim1. However, Albert fails to disclose wherein said **the transreflector is one of:**
a switchable mirror display; an electrochromic display; an electro-wetting display; and a roll-blind display.

In a similar field of endeavor Baucom discloses an Apparatus for displaying drawings. In addition, Baucom discloses wherein said **the transreflector is one of:**
a switchable mirror display; an electrochromic display; an electro-wetting display; and a roll-blind display(see para [0005], [0028], [0029]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Albert by specifically providing wherein said **the transreflector is one of:** **a switchable mirror display; an electrochromic display; an**

electro-wetting display; and a roll-blind display, as taught by Baucom, for the purpose of being able to change color attached to the electrode.

Claims 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert in view of Katase (US Publication number 2003/0025985).

Regarding claim 20, Albert discloses everything as specified above in claim1. However, Albert fails to disclose wherein said **further comprising a touch screen arrangement (25).**

In a similar field of endeavor Katase discloses an Electro-optical device, electronic apparatus, method for forming a colored layer, and method for manufacturing the electro-optical device. In addition, Katase discloses wherein said **further comprising a touch screen arrangement (25)** (see para [0110] (touch panel)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Albert by specifically providing wherein said **further comprising a touch screen arrangement (25),** as taught by Katase, for the purpose of improving the application of the device to have a simple input system.

Regarding claim 21, Albert discloses everything as specified above in claim1. However, Albert fails to disclose wherein said **A user interface (24) comprising a transreflective display and a touch screen arrangement .**

In a similar field of endeavor Katase discloses an Electro-optical device, electronic apparatus, method for forming a colored layer, and method for manufacturing the electro-optical device. In addition, Katase discloses wherein said **A user interface**

(24) comprising a transflective display and a touch screen arrangement (see para [0064], [0088], [0110] (touch panel).

Claim 17 is objected to because of the following informalities: the recitation of claim 17 "the display device comprises" does not make sense. Therefore, "**the display device comprises**" should have been "**the display device selected from one of:**" Appropriate correction is required.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to INSA SADIO whose telephone number is (571)270-5580. The examiner can normally be reached on MONDAY through FRIDAY 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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